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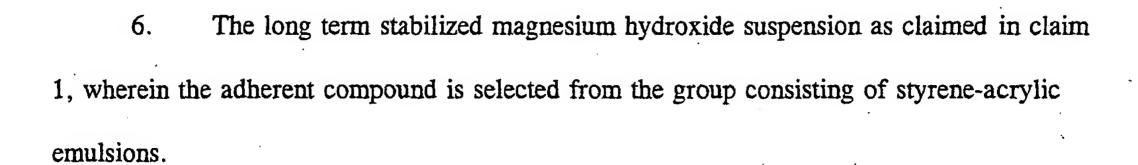
WE CLAIM:

1. A long-term stabilized magnesium hydroxide suspension adapted to cover pellets of several kinds of materials to avoid their agglomeration when treated at high temperatures, which comprises a solids content of about 51% to 61%; a water content of about 39% to 49%; a viscosity of about 500 to 1,500 cp.; an average particle size of about 1 to 2.5 microns; a Mg(OH)₂ content of about 50% to 60%; a chloride content of less than about 0.6% on a dry basis; a calcium content of less than about 1% on a dry basis; a pH of about 10.5 to 12; an equivalent magnesium oxide content of about 34% to 42%; a specific gravity of about 1.42 to 1.52; and including at least one anionic polyelectrolyte as a dispersant agent, at a concentration of at least about 25%, in an amount of about 0.5 to about 2.5%, by weight, on a dry basis and an adherent compound having a concentration of at least about 30% in an amount of about 0.5 to about 5%, by weight, on a dry basis; adapted to being stored for at least three months without substantial agitation and without experiencing substantial settlement, while avoiding the formation of a solid, hard substrate.

- 2. The long term stabilized magnesium hydroxide suspension as claimed in claim 1, wherein the anionic polyelectrolyte is selected from the group consisting of sodium polyacrylate and ammonium polystyrene/maleate.
- 3. The long term stabilized magnesium hydroxide suspension as claimed in claim 1, wherein from about 5 to 15%, by weight, of the total of solids of the suspension have a particle size of about 5 to 10 microns; from about 30 to about 40% have a particle size of

about 2 to about 5 microns; from about 25 to about 35% have a particle size of about 1 to 2 microns and from about 20 to about 30% have a particle size of about 0.5 to 1 microns.

- 4. A long term stabilized magnesium hydroxide suspension adapted to cover pellets of several kinds of materials to avoid their agglomeration when treated at temperatures of between about 900°C to 1,000°C, which comprises a solids content of about 55%; a water content of about 44%; a viscosity of about 1,000 cp.; an average particle size of about 2.0 microns; a Mg(OH)₂ content of about 55%; a chloride content of about 0.30%; a calcium content of about 0.45%; a pH of about 11.7; an equivalent magnesium oxide content of about 38%; a specific gravity of about 1.47; and including at least one anionic polyelectrolyte as a dispersant agent, at a concentration of about 40%, in an amount of about 1%, by weight, on a dry basis and an adherent compound having a concentration of at least about 30% in an amount of about 1.5% to 2.0%, by weight, on a dry basis; adapted to being stored for at least three months without substantial agitation and without experiencing substantial settlement, while avoiding the formation of solid, hard substrate.
- 5. The long term stabilized magnesium hydroxide suspension as claimed in claim 4, wherein about 10% of the total solids of the suspension have a particle size of about 5 to 10 microns; 35% have a particle size of about 2 to 5 microns; 30% have a particle size of about 1 to 2 microns and 25% have a particle size of about 0.5 to about 1 microns.



- 7. A process for the production of a long-term stabilized magnesium hydroxide suspension from magnesium hydroxide solids, which comprises the steps of:
 - a) washing the magnesium hydroxide solids;
 - b) filtering and repulping the magnesium hydroxide solids to obtain agglomerated solid particles having less than about 0.6% of chloride values;
 - dispersing the agglomerated solid particles by comminuting in dispersing equipment to reduce their particle size to provide a dispersed product;
 - d) grinding the dispersed product to further reduce the particle size so that at least the 50% of the ground product has a particle size of about 2 microns;
 - e) adding an adherent compound, at a concentration of at least about 30% in an amount of about 0.5 to about 5%, by weight, on a dry basis;.
 - f) dispersing the product of step e) in the dispersing equipment and;
 - g) adding at least one anionic polyelectrolyte as a dispersant agent, at a concentration of at least about 25%, in an amount of about 0.5 to 2.5%, by weight, on a dry basis.

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- 8. The process as claimed in claim 7, wherein step b) is carried out at least three times.
- 9. The process as claimed in claim 7, wherein about 50% of the dispersed product has a particle size of about 4.0 microns and comprising crystals of agglomerated Mg(OH)₂ having a crystal size of about 0.4 microns.
- 10. The process as claimed in claim 7, wherein the dispersing equipment used in step c) has a cutting disc rotating at about 1,200 to 3,000 RPM.
- 11. The process as claimed in claim 7, wherein step c) is carried out for about 20 to 30 minutes.
- 12. The process as claimed in claim 7, wherein step d) is carried out in a sand mill using zirconium silicate or stainless steel balls having a diameter less than about 1.5 mm.
- 13. The process as claimed in claim 7, wherein the anionic polyelectrolyte is selected from the group consisting of sodium polyacrylate and ammonium polystyrene/maleate, whereby the stability of the suspension is improved by providing the particles with electric charges which reduces their tendency to agglomerate and settle out.

- 14. The process as claimed in claim 7, wherein the dispersing equipment used in step f) includes a stainless steel cutting disc.
- 15. The process as claimed in claim 7, wherein the dispersing equipment used in step f) includes a polypropylene cutting disc.
- 16. The process as claimed in claim 7, wherein the adherent compound is added in an amount of about 1.5% to 2.0%, by weight, on a dry basis.
- 17. The process as claimed in claim 7, wherein the adherent compound is selected from the group consisting of styrene-acrylic emulsions.